

In the Claims

Kindly cancel claims 1-4 and 8 and amend claims 6 and 7 as follows:

1-4 (Canceled)

5. (Canceled)

6. (Currently Amended) An article comprising diamond deposited directly on a non-metallic open-cell foam substrate having a porosity sufficient to permit the flow of fluids in at least one direction through said non-metallic open-cell foam substrate ~~the material.~~

7. (Currently Amended) The article of claim 6 wherein said non-metallic open-cell foam ~~framework material~~ substrate comprises a material compatible with a diamond deposition process.

8. (Canceled)

9. (Original) The article of claim 6 wherein said diamond has a thickness of at least about 2 microns.

10. (Canceled)

11. (Original) The article of claim 6 wherein said article has a porosity of at least 100 voids/inch.

Claims 12 through 27 (Withdrawn)

28. (Previously Amended) An article comprising:
a non-metallic reticulated unitary structure;
an interlayer coated on said non-metallic reticulated unitary structure;
a diamond layer deposited on said interlayer configured to form a contiguous open structure configured for fluid flow in more than one axis through said contiguous open structure, wherein said diamond is fully coalesced.

29. (Previously Amended) An article comprising diamond directly deposited on a non-metallic framework material substrate having a porosity sufficient to permit the flow of fluids in at least one direction through the material, wherein said diamond is fully coalesced.

30. (Previously Amended) An article comprising diamond directly deposited on a non-metallic open-cell foam substrate having a porosity sufficient to permit the flow of fluids in at least one direction through the material, wherein said diamond is fully coalesced.

REMARKS

The Examiner is thanked for the allowance of claims 28-30 and the allowance of the subject matter of claims 6 and 7, 9 and 11.

Claims 6 and 7 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention.

Claims 1-4 and 8 have been cancelled, without prejudice.

The amendments here presented are made for the purposes of better defining the invention, rather than to overcome the rejections for patentability. Support for the amendments herein presented can be found in the specification and claims as filed. No new matter has been introduced as a result of the amendments. Reconsideration and allowance is respectfully requested in view of the amendments and the following remarks.

The 35 U.S.C. § 112 Rejection

Claims 3, 6-9, and 11 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. This objection is respectfully traversed.

In the Office Action at paragraph 2, the Office Action states in claims 3 and 8, the formation of interlayer coating between the diamond and the non-metallic framework material substrate renders the claims indefinite because the independent claims 1 and 6 from which claims 3 and 8 depend respectively recite that the diamond is in direct contact with the non-metallic framework material substrate. The Office Action asserts that it seems the limitations in claims 3 and 8 are contradictory to the recitations from claims 1 and 6 respectively. Applicant respectfully disagrees with the assertion in the Office Action.

However, claims 3 and 8 have been canceled, thus the rejection is now moot.

The Office Action further asserts in Claim 6, line 3, the term "the material" should be changed to the foam substrate because it is unclear that the material is the non-metallic open-cell foam substrate or other than the foam substrate.

The Office Action also asserts that claim 7 and 8 recite the limitation “framework material” in line 1. The Office Action further asserts that there is insufficient antecedent basis for this limitation in the claim.

Claims 6 and 7 have been amended to more clearly claim the subject matter.

With this amendment it is respectfully submitted the claims satisfy the statutory requirements.

The 35 U.S.C. § 103 Rejection

Claims 1, 2, and 4 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Cho (U.S. Patent No. 4,944,772) in view of Bovenkerk et al (U.S. Patent No. 4,288,248). This rejection is respectfully traversed.

In the Office Action at paper number 3, paragraph 4, the Office Action asserts that Cho teaches a production of supported polycrystalline abrasive compact comprising a porous polycrystalline diamond compact 26, an intermediate diamond layer 28 having a thickness of 30 to 500 microns, and a carbide support 24 (figure 3). The Office Action further asserts that Cho teaches the porous polycrystalline diamond compact having been disclosed in US 4,288,248 (column 5, lines 9-11). The Office Action further asserts that US 4,288,248 to Bovenkerk discloses a porous polycrystalline diamond compact defined a substantially continuous interconnected network of pores, dispersed throughout the compact. The Office Action also asserts that Bovenkerk further teaches the network of pores runs throughout the diamond layer and most are less than a micron in diameter. The Office Action asserts that this indicates that the acid penetrated the entire diamond layer and acted to remove the metallic phase substantially uniform throughout (column 4, lines 60-68). The Office Action further asserts that the acid is able to flow through the pore structure to remove the infiltrant in the compact. The Office Action also asserts that likewise, it is clearly apparent the porous polycrystalline diamond compact must have a porous construction to allow the flow of fluids in at least one direction through the compact. The Office Action asserts that therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the porous polycrystalline diamond compact having a substantially continuous interconnected

network of pores because such is the typical feature of the porous polycrystalline diamond compact material and Bovenkerk provides the necessary details to practice the invention of Cho. Applicant respectfully disagrees with the assertions in the Office Action.

Claims 1-4 have been canceled. Thus, the rejection is now moot.

In view of the foregoing, it is respectfully requested that the rejection be withdrawn and it is respectfully asserted that the remaining claims are now in condition for allowance.


Request for Allowance

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited. Accordingly, entry of this Amendment is appropriate and is respectfully requested.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Respectfully submitted,
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